Catherine (Yang) Tian

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EDUCATION

Master of Information System Management, **Carnegie Mellon University**   Sep 2022 – Apr 2024
Honors Bachelor of Mathematics in Statistics, **University of Waterloo**   Sep 2016 – Jun 2021

SUMMARY OF QUALIFICATIONS

- Languages: Java, JavaScript, TypeScript, Python, Golang, Scheme, HTML, CSS, JSON, SQL, XML.
- Frameworks: React, Redux, React Native, Node.js, Express.js, Next.js, Spark, Spring Boot, MyBatis, scikit-learn.
- Database & Tools: MongoDB, MySQL, PostgreSQL, Firebase, Cloud Firestore, AWS, Azure Databricks, Ajax, gRPC, Git, GitHub, GitLab, Docker, Kubernetes, Yarn/NPM, Jenkins, Maven, Hibernate, Webpack.
- Knowledge: OOD/OOP, Web & Full Stack Development, CI/CD, Machine Learning, Big Data, Distributed System.

WORK EXPERIENCES

Software Engineer Intern, ZipRecruiter, Santa Monica, CA   May 2023 – Aug 2023
- Design and rebuild the banner system to integrate seamlessly with the legacy system in a centralized manner.
- Build an **HTTP** and **gRPC** service with **Express** and **Node**, enables **Static Site Generation** with **Next.js, Golang** and **Server-Side Rendering**.
- Deploy the service using **Kubernetes** and **Docker** on **AWS EC2**, and expose the banner API using **Nginx** Proxy for other frontend apps across the company. Configured AWS infrastructure using **Terraform**.
- Utilize **Webpack** to compile the banner service code, supporting non-React frontends that request banners.
- Authored design documentation focusing on scalability, enabling other teams to use the service more conveniently.

Full Stack Developer, Fintelics, Toronto, Ontario   Aug 2021 – Aug 2022
- Developed various cross-device apps as the NFT marketplace and Web3 social media platforms.
- Implemented the frontend with **React** and **Redux**; Integrated Tailwind CSS and styled-components for responsive user interfaces. Used **Axios** to connect the backend.
- Developed the backend with **Node.js/Express**. Built the REST APIs. Utilized Mongoose with **MongoDB**, and Sequelize with **PostgreSQL** for data migration and manipulation on the database.
- Implemented user authentication and authorization with **AWS Cognito** and **SES** for over **10k** users.
- Built a software cryptocurrency wallet system using ethereum.js, **AWS Lambda**, **AWS API Gateway**, and **AWS Secrete Manager**, enabling users to manage their wallets inside the app smoothly.
- Created a payment solution using **React Native** packages and **Google APIs**. It enabled users to use Apple/ Android pay on a mobile app. It significantly improved the user payment process.
- Built **Socket.IO** (WebSocket) based real time notification system and user chatting pages.
- Held the static website in **AWS S3**, and deployed the Node.js backend with **docker** and **AWS EC2**. Used **AWS ECR** to store docker images. Used AWS S3 for file management.
- Led a team of three to develop a new section for a NFT marketplace web app, and to integrate the web app with OpenSea through OpenSea APIs and **IPFS**, which increased **over 40%** of active users.
- Achieved test automation using **Jest** and **React Testing Library**.
- Used **web3.js** for transactions and MetaAuth as the authentication middleware with MetaMask.
- Developed a payment section using **Stripe API** for a web app.

Software Development Intern, Behaivior, Pittsburgh, PA   May 2021 – Jul 2021
- Developed web and mobile applications using **Typescript, React**, and **Redux**, for people suffering from opioid addiction. Built new responsive frontend features through **Chakra UI.**
- Implemented the backend with **Firebase** (**Google Cloud function, Firestore, Realtime Database**).
- Implemented helper functions in **Python** with **Pandas**, **Numpy**, **scikit-learn** and **Keras**, enabling fellow data scientists to preprocess the data. Performed data visualization with **Matplotlib**.
- Applied **CNN, XGBoost** and **LightGBM** to predict users' craving state with more than 70% accuracy. Conducted dimensionality reduction (autoencoder, T-SNE, PCA) to detect user's hidden characters.

Data Science Analyst, Loblaw Companies Limited, Brampton, Ontario   Jan 2020 – Apr 2020
- Implement data engineering and modelling for Canada's largest retail company.
- Performed data cleaning and feature engineering over **10-millions** of raw data (with ~3k features) from **Teradata** using **Spark SQL**, **MLlib** and **Spark DataFrame** on Databricks.
- Built the machine learning pipeline and performed hyperparameter tunning with tools from **PySpark**.
- Applied **Random Forest, XGBoost, LightGBM** and **LSTM** to deliver business insights and gave advice on pricing to the vendors. The project was estimated to generate **500-million-dollar** of profit uplift.

Projects

Java Based Web Server, (Java / Spring Boot / JPA / MySQL / MySQL Workbench / MyBatis / Shiro)
- Implemented a Spring Boot based student management System with Spring Data JPA and MySQL.
- Used MyBatis for custom SQL and database access. Managed users' roles and permissions by Shiro.

Kitty City, (React / Redux / localStorage / Thunk / PayPal API / JWT / Node.js / MongoDB / Heroku)
- Designed and developed a MERN eCommerce platform with the shopping cart and PayPal payment.
- Introduced product rating & review system. Created admin area to manage products, orders and customers.

LetUsMeet, (React / Redux / Firebase / Google APIs / Google & FB OAuth / Formik / Semantic UI)
- Built a social platform enabling users to create, join events and chat in real-time.
- Integrated with firebase service such as Firebase Authentication, Firestore Database, Firebase Storage, Realtime Database, Cloud function etc.